



Herta
User Manual

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Before Starting

Before using Herta for the first time, it is essential to successfully pass through all installation steps without having received any error messages. In addition, the Herta Security license must be activated correctly. Please contact support@hertasecurity.com if you encounter difficulties during installation and license activation processes.

Likewise, the correct configuration of the program is important. The system's administrator must ensure that the database connection is correctly performed and initial biometric parameters are properly assigned in order to meet the specifications of the scenario being analyzed.

Introduction

Herta is a real-time face detection and subjects's identification solution from multiple video streams. To carry it out it includes different individual modules:

- BioSurveillance: allows the processing of video surveillance cameras, in H.264 format, MJPEG, among others.
- BioFinder: Allows the use of video files using Nvidia GPU.
- BioAccess: Provides face detection and real-time identification from multiple video streams.
- BioCompare: Allows you to compare an image with all alarms generated in the database.
- BioMarketing: Extracts the demographic characteristics of alarms.
- BioGenerator: Allows to generate synthetic biometric references.

Each of these modules requires its own license.

Hardware Requirements

The following are the minimum hardware requirements necessary for the correct operation of the program and its modules.

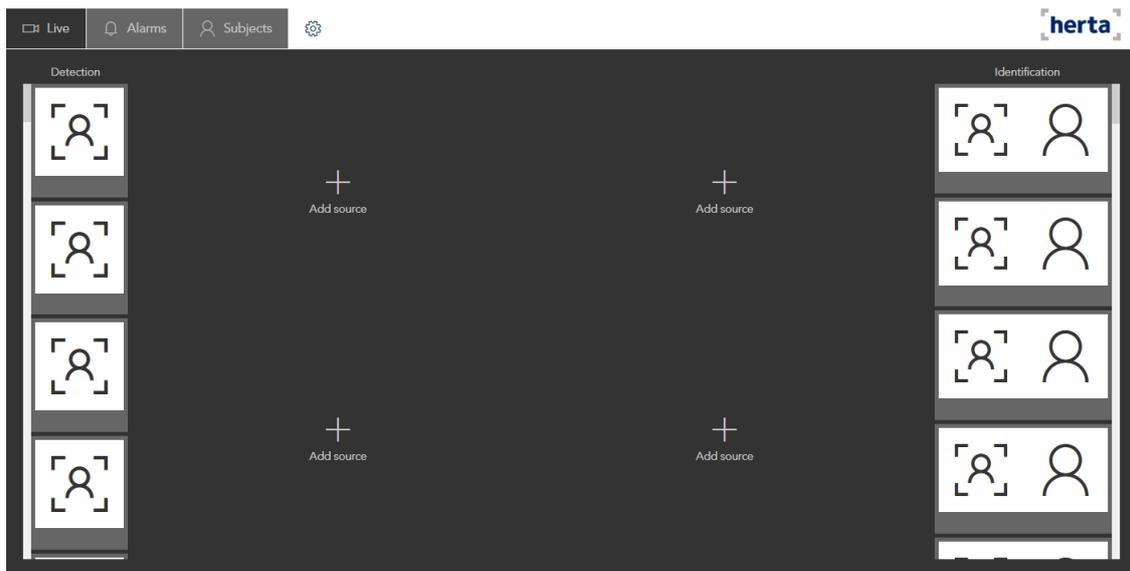
Products \ Cameras	1 Camera (1080p)	2 Cameras (1080p)	4 Cameras (1080p)	6 Cameras (1080p)
BioSurveillance 3.0	CPU: 4 cores 4 threads 2,5GHz RAM: 4GB GPU: GTX 1050	CPU: 4 cores 8 threads 3,2GHz RAM: 8GB GPU: GTX 1060 6GB	CPU: 4 cores 8 threads 3,2GHz RAM: 8GB GPU: GTX 1080	CPU: 6 cores 12 threads 3,2GHz RAM: 16GB GPU: GTX 1080 Ti
BioMarketing 2.5	CPU: 4 cores 4 threads 2,5GHz RAM: 4 GB	CPU: 4 cores 8 threads 3,2GHz RAM: 8GB	CPU: 6 cores 12 threads 3,2GHz RAM: 16GB	CPU: 8 cores 16 threads 3,2GHz RAM: 16GB
BioAccess 3.0	CPU: 4 cores 4 threads 2,5GHz RAM: 4 GB GPU: GTX 1050	CPU: 4 cores 4 threads 2,5GHz RAM: 8GB GPU: GTX 1050 Ti	CPU: 4 cores 4 threads 2,5GHz RAM: 8GB GPU: GTX 1050 Ti	CPU: 4 cores 4 threads 2,5GHz RAM: 8GB GPU: GTX 1060
BioFinder 3.0	CPU: 6 cores 12 threads 3,2 GHz - RAM: 16GB - GPU: GTX 1080 Ti			

In BioMarketing, the cameras are configured using the MJPEG stream at 8 FPS.
 BioMarketing software does not support Xeon processor.
 In general conditions, one 4K camera is equivalent to four 1080p cameras.

User interface

The Herta's user interface contains a Tab-menu on top of the screen, which walks the user through different sections. Each Tab display its contents in the bottom window of the screen.

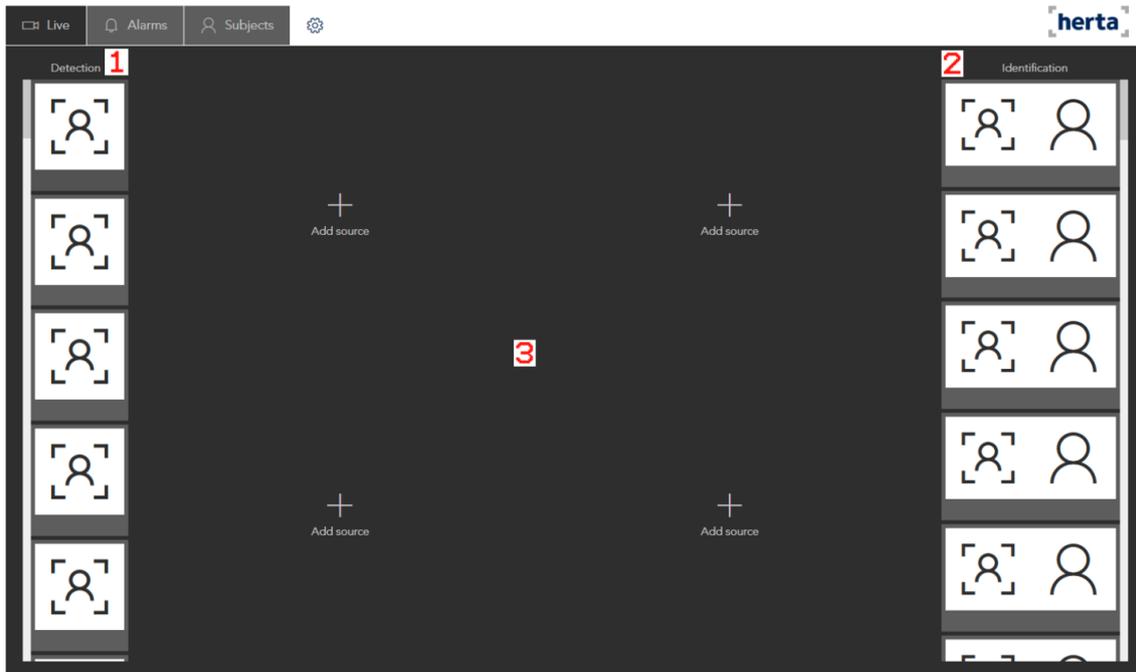
In the following sections will be shown the characteristics of each of the features that each tab allows. Before this, we present the different tabs:



1. **Live** Tab: View real-time camera images, detections and identifications.
2. **Alarms** Tab: Get more details from previous alarms.
3. **Subjects** Tab: Search, add, modify, or delete subjects from subject list.
4. **Settings** Tab : Setup the application according to your meetings to get the best possible performance.

Live

Here are the main controls shown in the Live tab of the application:



1. **Detection** Panel: The last alarms that don't match any registered subject in the database.
2. **Identification** Panel: Indicates the last alarms in which a subject in the *subject list* has been recognized. The image on the left shows captured face and right column contains profile image of the subject in the database. If you put the mouse pointer above, you can see the Scored ID in green.
3. **Add Source** icon: Opens the Source Management panel. Source are shown by a grid.

Number of cameras to analyze

Within the **Live** tab you can analyze various cameras or multimedia content at the same time. To assign the maximum number of sources to be analyzed, you must change the **Grid** size parameter in the configuration section, see **General Settings** section in this manual for more information.

The number of cameras to analyze can directly affect the performance, since the number of faces that must be detected can be increased. Thus, according to the hardware resources, a maximum number of cameras can be analyzed, at the same time.

Warning: the license limits the number of media files to be analyzed at the same time.

Add Sources

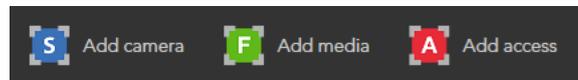
Herta allows add IP cameras, videos and images from the modules **BioSurveillance**, **BioFinder** and **BioAccess**. Depending on the license you have, you will have access to all the modules or to which the license allows you.

To add a new source, click **Add Source icon**  on the **Live** tab. A window will open with a list of all the configured Sources, if they have been previously configured. In the upper right corner you will see a menu with the different options (sorted from left to right):



1. Edit sources: Edit the configuration of an existing source.
2. Delete sources: Deletes an existing Source.
3. Import sources: Import the settings of the source with previously exported XML files.
4. Export sources: Exports the configuration of the current source in the font list.

To add sources you must select the type of source you want:



1. BioSurveillance: Add IP cameras in MJPEG, H.264, H.265, USB cameras and others.
2. BioFinder: Add videos and images.
3. BioAccess: Allows you to add IP cameras.

ONVIF

1. Automatic Camera Detection: A new window is opened that allows you to automatically detect the cameras connected in your network.



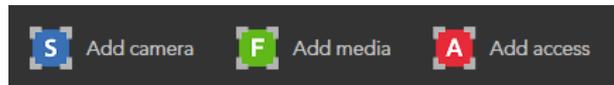
- a. Explore network: This icon is responsible for detecting the various ONVIF cameras connected to the network. Once detected they will appear in a list with their features.
- b. Add Camera: Cameras selected by the check box will be added to the camera list when you click **Add** icon.

Once the different cameras have been detected, some of them will ask for the user and password's credentials necessary to establish the connection.

Once the connection is established, the different video streams will be displayed. Here you can select the desired ones and click on **add source**, they will appear in the sources tab.

Adding and Setting Up a New Camera

Adding a new camera can be done through one of the two modules: **BioSurveillance** or **BioAccess**.



Clicking on Add Camera or Adding Access will open the following window (the icon will vary depending on whether it is a BioSurveillance or BioAccess camera):

The screenshot shows a configuration window for a camera source. On the left, there is a sidebar with a blue 'S' icon and a list of video formats: H.26x, MJPEG, Snapshot, USB, and Other. The main area contains the following fields and options:

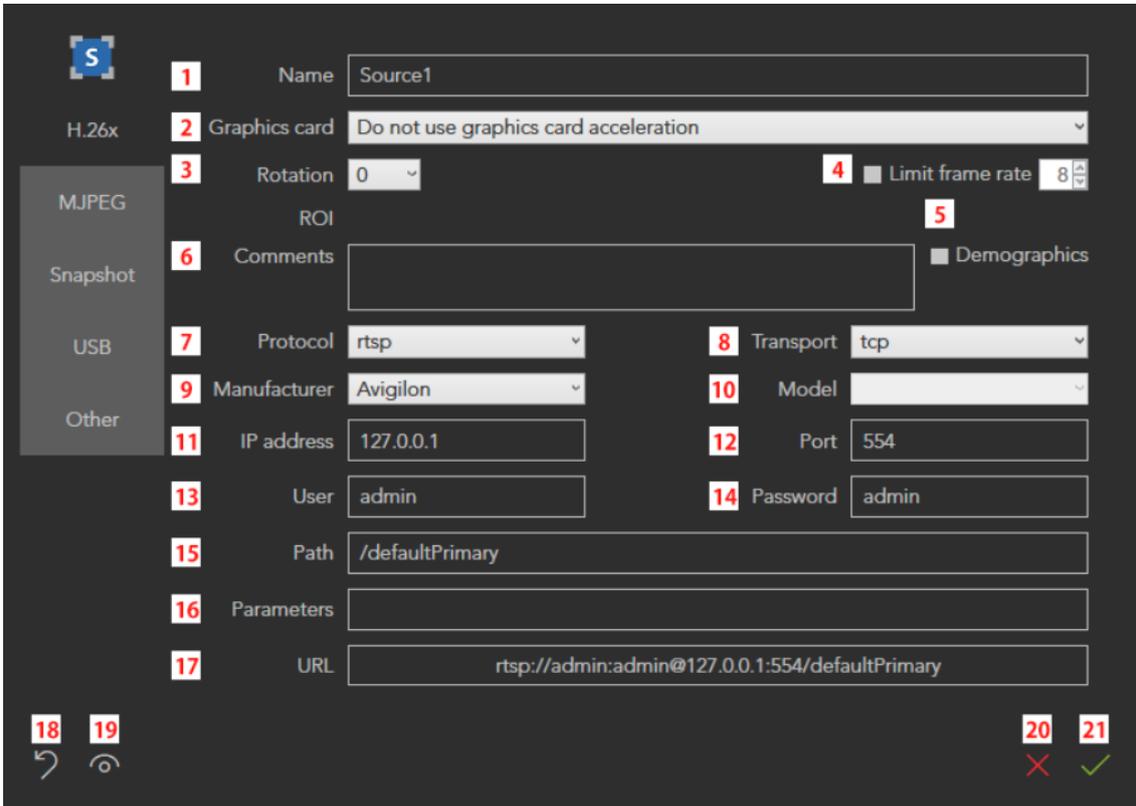
- Name: Source1
- Graphics card: Do not use graphics card acceleration
- Rotation: 0
- Limit frame rate: 8
- ROI: (empty)
- Comments: (empty)
- Demographics: (checkbox, unchecked)
- Protocol: rtsp
- Transport: tcp
- Manufacturer: Avigilon
- Model: (empty)
- IP address: 127.0.0.1
- Port: 554
- User: admin
- Password: admin
- Path: /defaultPrimary
- Parameters: (empty)
- URL: rtsp://admin:admin@127.0.0.1:554/defaultPrimary

At the bottom, there are navigation icons (back, forward) and a confirmation area with a red 'X' and a green checkmark.

The following sections explain how the different types of cameras are configured. The configuration options are the same in the two modules (BioSurveillance and BioAccess).

Mjpeg, H.264 and PhotoFrame

This section will mention how to add a MJPEG, H.264 and Frame. The camera registration window is shown below:



The screenshot shows a camera registration form with the following fields and callouts:

- 1**: Name (Source1)
- 2**: Graphics card (Do not use graphics card acceleration)
- 3**: Rotation (0)
- 4**: Limit frame rate (checkbox, unchecked)
- 5**: ROI (checkbox, unchecked)
- 6**: Comments (empty text box)
- 7**: Protocol (rtsp)
- 8**: Transport (tcp)
- 9**: Manufacturer (Avigilon)
- 10**: Model (empty dropdown)
- 11**: IP address (127.0.0.1)
- 12**: Port (554)
- 13**: User (admin)
- 14**: Password (admin)
- 15**: Path (/defaultPrimary)
- 16**: Parameters (empty text box)
- 17**: URL (rtsp://admin:admin@127.0.0.1:554/defaultPrimary)
- 18**: Back arrow icon
- 19**: Refresh icon
- 20**: Cancel (X) icon
- 21**: Confirm (checkmark) icon

To setup the camera you will need to fill in the following fields:

1. You can give a name to identify the camera using the **Name** field. The name must be unique within the camera list.
2. **Graphics card**: select the graphics card or CPU processor.
3. **Rotation** you can specify whether the image the camera is sending should be rotated and how many degrees.
4. The **Limit frame rate** option will allow you to limit the number of images per second Herta will process. If this option is not checked, Herta will attempt to process every image the camera sends, which, depending on the camera's own settings, may have a negative impact on the behavior. By default, the number of images will be limited to eight (8) images per second.
5. **Demographics**: Extracts demographic characteristics from alarms if you have the *BioMarketing* module.
6. You can add additional comments in the **Comments** field.
7. Herta can connect to IP cameras using both *http* and *rtsp* protocols (configured through the **Protocol** field). Not all manufacturers or models support both protocols.

Please refer to the camera manufacturer's documentation to find out the specific features of the model.

8. Choose the correct transport protocol from the **Transport** list.
9. Herta disposes some default settings for certain manufacturers. Please choose the manufacturer of your camera from the **Manufacturer** list.
10. **Model**.
11. **IP Address** enter the camera IP address.
12. **Port** enter the TCP / IP port through which it connects to the camera. By default, for *http* connections, the port is 80 and for *rtsp* is 554.
13. **User** enter the credentials to connect to the camera.
14. **Password** enter the credentials to connect to the camera.
15. As you can see, the **Path** text field changes with each manufacturer. Each manufacturer has its own name to connect to the video stream. If a camera's manufacturer is not listed, choose **Other** option. In this case the Route and Parameters must be setup manually.
16. **Parameters**: setup additional camera parameters.
17. **URL**: Full path of the camera used to connect the camera is displayed.
18. **Reset** to defaults.
19. **Camera Preview**: Used to delimit regions (explained in the *Define regions* section).
20. **Discard** changes and close
21. **Save** changes and **add** the camera to the list.

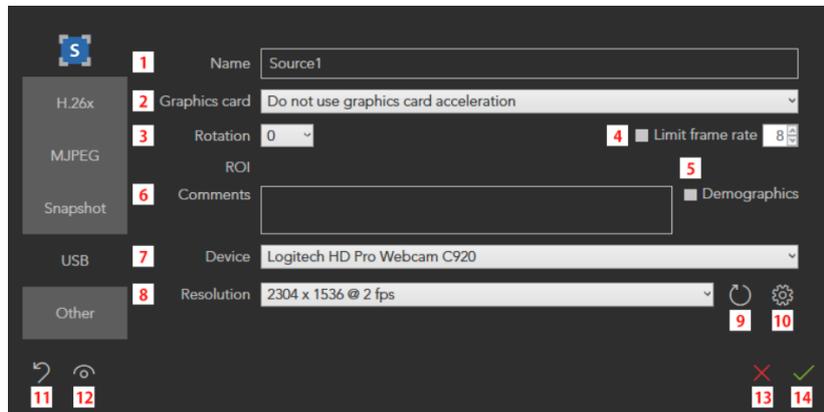
If you are not sure of any of the settings of your camera, please access the camera's documentation or contact the manufacturer or seller.

At the end of the menu you can see the full URL that will be used to connect the camera (for example `http://admin:admin@192.168.168.52:80/axis-cgi/mjpg/video.cgi`). You can test this URL on an external application such as a browser (for HTTP) or a video player that supports RTSP (such as VLC) to make sure it works.

Note: Points 3, 4 and 19 are available only when CPU processing (point # 2) has been selected. By using GPU these fields are not modifiable.

USB Camera

If you want to add a camera connected to the computer via USB port, click on the **USB** tab and the following window will appear:

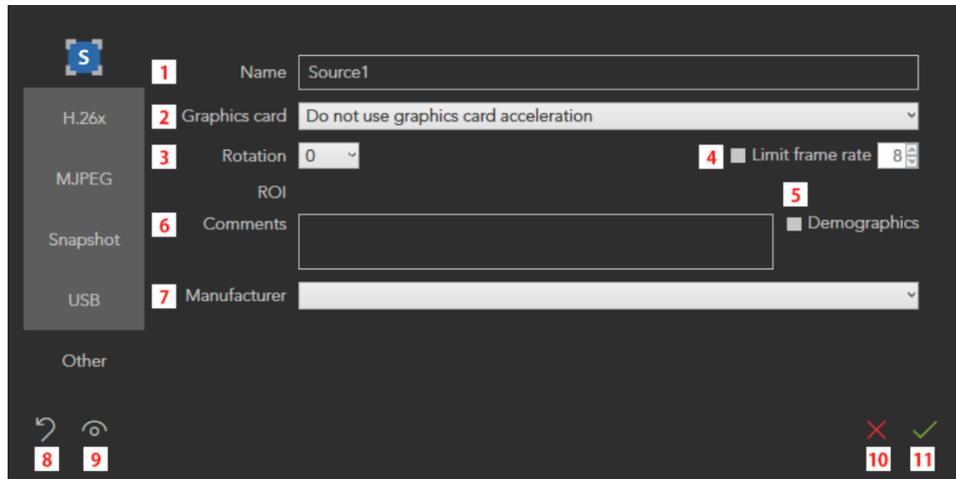


To setup the USB camera you will need to fill in the following fields:

1. You can give a name to identify the camera using the **Name** field. The name must be unique within the camera list.
2. **Graphics card**: select the graphics card or CPU processed.
3. **Rotation**: you can specify whether the image the camera is sending should be rotated and how many degrees.
4. The **Limit frame rate** option will allow you to limit the number of images per second that Herta will process. If the option is not checked, Herta will attempt to process each image the camera sends, which, depending on the camera's own settings, may have a negative impact on the behavior. By default, the number of images will be limited to eight (8) images per second.
5. **Demographics**: Extracts demographic characteristics from alarms if you have the BioMarketing module.
6. You can add additional comments in the **Comments** field.
7. If you have a device connected to your computer, it will automatically appear when you open the USB panel or when you click **Update** in the **Device** section. If you have more than one click on the drop down menu to choose the desired one.
8. You can then choose the most appropriate **Resolution**.
9. The **Refresh** icon searches for connected USB devices.
10. Finally you can configure camera details by clicking on the **Settings** icon.
11. Reset icon to default values.
12. **Camera preview**: serves to delimit regions (explained in the **Define regions** section).
13. Discard changes and close.
14. Save changes and add the camera to the list..

Note: Points 3, 4 and 12 are only available when CPU processing (point # 2) has been selected. By using GPU these fields are not editable.

Other



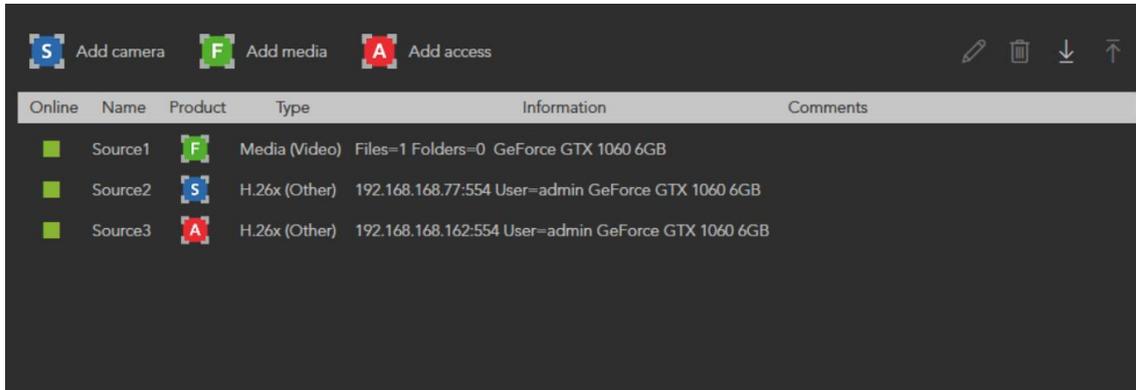
There are some cameras that require different parameters that are not standardized. You can add these cameras from this section, which will vary according to the chosen one. To set them up, add **Other** (you will have to fill in the following fields):

1. Choose a name to identify the camera using the **Name** field. The name must be unique within the camera list.
2. **Graphics card**: select the graphics card or CPU processed.
3. **Rotation** section you can specify whether the image the camera is sending should be rotated and how many degrees.
4. The **Limit frame rate** option limits the number of images per second Herta will process. If the option is unchecked, Herta will attempt to process every image the camera sends, which, depending on the camera's settings, may have a negative impact on its behavior. By default, the number of images will be limited to eight (8) images per second.
5. **Demographics**: Extracts demographic characteristics from alarms if you have the BioMarketing module.
6. To add additional comments use the **Comments** field.
7. If click on the **Manufacturer** drop-down list you will see three options: Avigilon, IDIS and uEye options. Choose the most suitable manufacturer of your camera. According to the manufacturer chosen the configuration will be different.
8. Reset icon to default values.
9. **Camera preview**: serves to delimit regions (explained in the Define regions section).
10. **Discard** changes and close.
11. **Save** changes and add the camera to the list.

Note: Points 3, 4 and 12 are only available when CPU processing (point # 2) has been selected. By using GPU these fields are not modifiable.

Add the camera to the Live tab

Once the camera, or media files, is configured, click **Save** icon. The camera and media files will be available at **add source** menu.

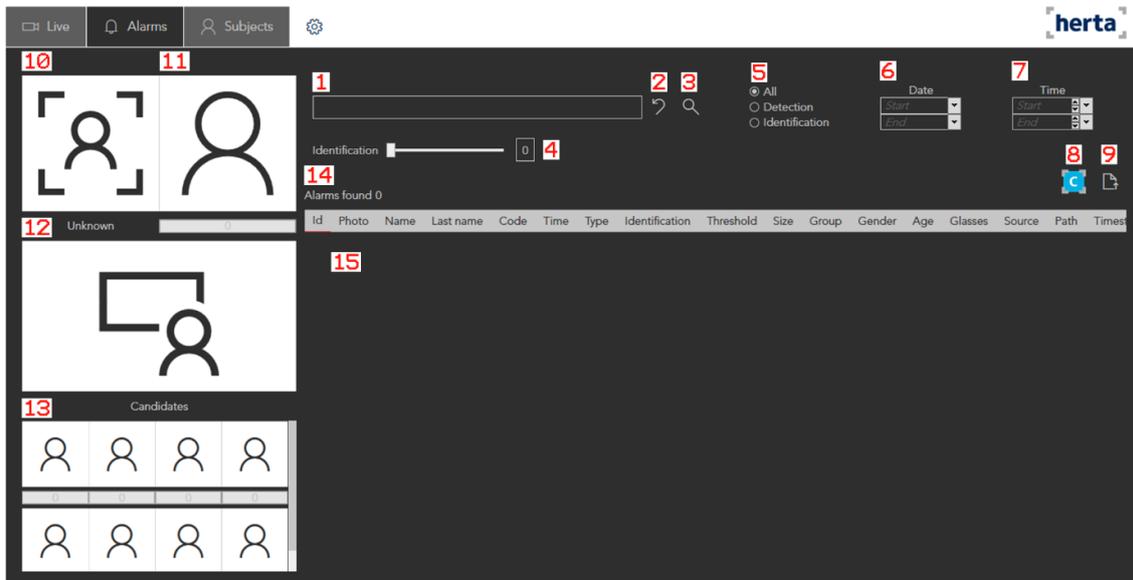


Online	Name	Product	Type	Information	Comments
<input type="checkbox"/>	Source1		Media (Video)	Files=1 Folders=0 GeForce GTX 1060 6GB	
<input type="checkbox"/>	Source2		H.26x (Other)	192.168.168.77:554 User=admin GeForce GTX 1060 6GB	
<input type="checkbox"/>	Source3		H.26x (Other)	192.168.168.162:554 User=admin GeForce GTX 1060 6GB	

You can now add a camera to the **Live** tab by selecting it and double clicking on it. Livestream will be available on **Live** tab.

Alarm management

Within the alarms tab you can view and manage the alarms generated by Herta. When clicking on the **Alarms** tab the window will be shown as in the following image:



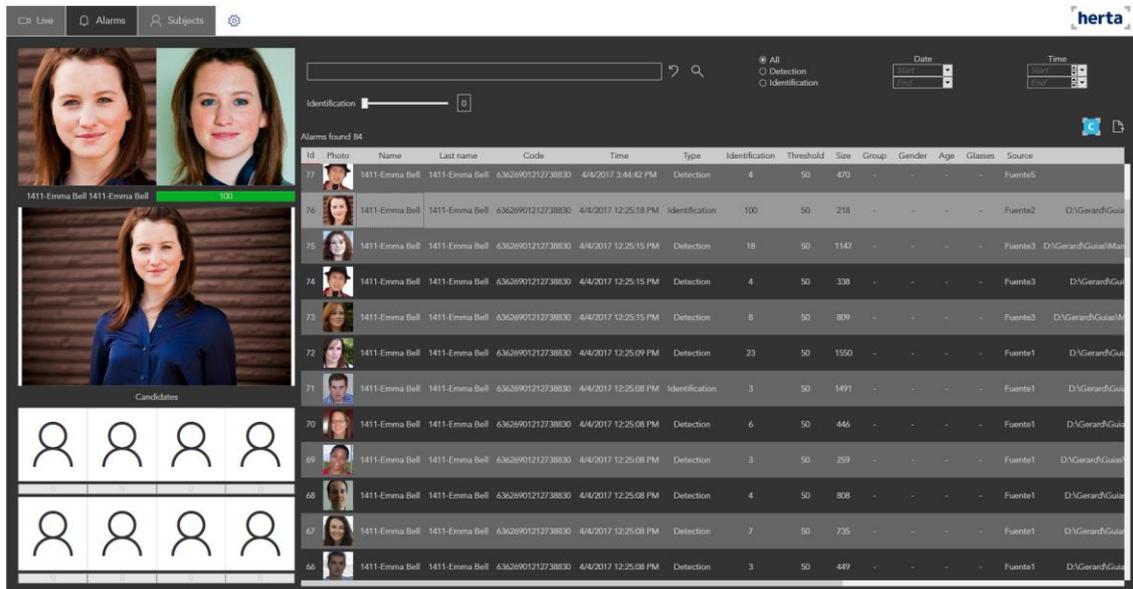
1. **Search:** allows filtering by text.
2. **Reset Search:** removes the previous search and returns to default settings.
3. **Search icon:** clicking the icon will filter the alarms search. If you click the icon with the default parameters, all the alarms of the database that meet these parameters will appear.
4. **Score:** this value corresponds to the threshold of identification. If a value is set, only alarms that exceed this value will displayed in the search results.
5. Allows you to choose which type of alarms to filter between **All**, **Detection** and **Identification**.
6. This other filtering option allows Herta to only show the generated alarms between a **date ranges**.
7. Allows Herta to only show the generated alarms between a **time range**.
8. **BioCompare:** This will be displayed if you have a valid license. BioCompare allows to compare an image with the alarms present in the database. To see the detailed information of its operation see the section "BioCompare" of this guide.
9. **Export:** alarms in PDF format or Microsoft Excel spreadsheet (.xlsx).
10. Here you see the best picture of the generated alarm. Showing up the name of the subject that has matched the highest score below.
11. Here you see the best candidate registered in the database. Even if it was not an identification, it will always show the candidate with the highest score. Below this appears the value of the score.
12. Here is shown the frame of the best alarm image.

13. Here are all the candidates that generate a score with the detected subject. Below each candidate the value of the score appears.
14. This default value is set to 0 because there are no alarms to display. When a search is made, the value of the number of alarms displayed will be displayed.
15. In this region will appear all the alarms that correspond with the realized search.

The alarms are shown in list with each of the relative parameters to the same one. This information is as follows:

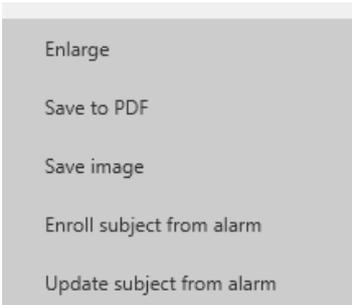
1. **Id:** Each alarm has an identification code given by the application.
2. **Pic:** Shows the capture of the face that has caused an alarm.
3. **Name:** Displays the name of the subject if it has been identified or, by default, the name of the most similar subject if it has been detected but not identified.
4. **Last Name:** Displays the surname of the subject if it was an identification or, by default, the surname of the most similar subject if the subject has been detected but not identified.
5. **Code:** If the alarm has been an identification it shows the code of the identified subject, but, it will show a 0 by default.
6. **Time:** Shows the time when the alarm was generated.
7. **Type:** Determines the type of alarm: identification and detection.
8. **Score:** Shows how sure the algorithm is from 0 to 100, which is a face in the case of a detection and how safe is the face of the identified subject in the case of an identification.
9. **Threshold:** the threshold defined in the configuration identification.
10. **Size:** it is the size in pixels of the face that generates alarm.
11. **Group:** If the alarm is an identification and the identified subject is registered in a group, displays the name of this group.
12. **Genre:** shows the genre to which the detection subject belongs in case the BioMarketing option is selected.
13. **Age:** shows the age at which the detection subject belongs in case the BioMarketing option is selected.
14. **Glasses:** shows if the subject of the detection has or does not have glasses in case the BioMarketing option is selected.
15. **Source:** Displays the name of the source that generated the alarm. In the case of cameras shows the stream.
16. **Timestamp:** This value shows the instant of time in which the alarm was generated. In the case of Videos corresponds to the hour, minute and second in the video when the alarm was generated. For cameras this field is not relevant since the time the alarm was generated already appears in the **Time** column.
17. **Comments:** If the alarm is an identification and the subject has a comment on his record, this comment appears in this section.

Once you have seen the tools, we go on to explain the operations that are allowed to do with the alarms. In the following image we can visualize the alarms present in a database:



Note: When an alarm is of the "detection" type, the subjects that have given the highest Score value will also appear. For this reason, we can see that the detection alarms are assigned the subject of the database that would have given the highest score if it was an identification.

To access the operations allowed by the software Herta, we must right-click on the desired alarm and we will open the following menu:



1. **Enlarge:** display the enlarged images recorded by the alarm.
2. **Save to PDF:** a PDF file of the specific alarm is generated with all the information including the enlarged image and the Snapshot.
3. **Save image:** save the different images generated by the alarm.
4. **Register subject from alarm:** opens the subject registration window that allows you to register a new subject using the images recorded by the alarm. This section is explained in detail in the section Registering subjects from previous alarms.

5. **Update subject from alarm:** allows to update an existing subject in the database with the new images recorded by the alarm. This section is explained in detail in the Modify and update subjects.

The left side images (Alarm image, best candidate, frame and candidates) also allow us to do some of the operations mentioned above:

- Left clicking on the image of the detection alarm with the mouse, enlarged images and candidates are displayed.
- By double clicking the mouse on the image of the subject with the highest score, the subject's editing window is accessed.
- Double clicking with the mouse on the frame image displays enlarged images.
- By double clicking with the mouse on the various candidates, the subject's editing window is accessed.

There are some filters that are already configured by default. These filters are:

- **Identification:** it is to value 40. It will only show those alarms that gave an identification score superior to 40.
- **Alarm type:** is in identification. It will only show the identification alarms; These alarms are those that the detected subject obtained a score of similarity with at least one of the subjects of the database superior to the configured identification threshold.
- **Date:** current date. Only shows alarms made on the same day that the search is being performed.

Registration and subjects management

In the tab of record of subjects there are different tools that will be analyzed next:



a) **Filter options:** Different filters to search for specific subjects in the database.

1. **Search Bar:** Search for subjects that match the entered characters. The search engine looks for exact matches, to find matches it is necessary to include the special character '%'. Example: If we type 'Ger%', we will see all the matches that start with Ger, like Gerard, Germán, etc. The fields that you can search are Name, Last Name and Code.
2. Reset subject search.
3. Search icon. To perform a search you must click when all the desired filters are defined.
4. **Status:** search for active or inactive subjects.
5. **Modified:** search edited or unmodified subjects.
6. **Expiry:** search for expired or unexpired subjects.
7. **Date:** find registered subjects on specific dates.
8. **Time:** search for registered subjects at specific times.

b) **Registration tools:** they are used to manage the subjects in the database (sorted from left to right):

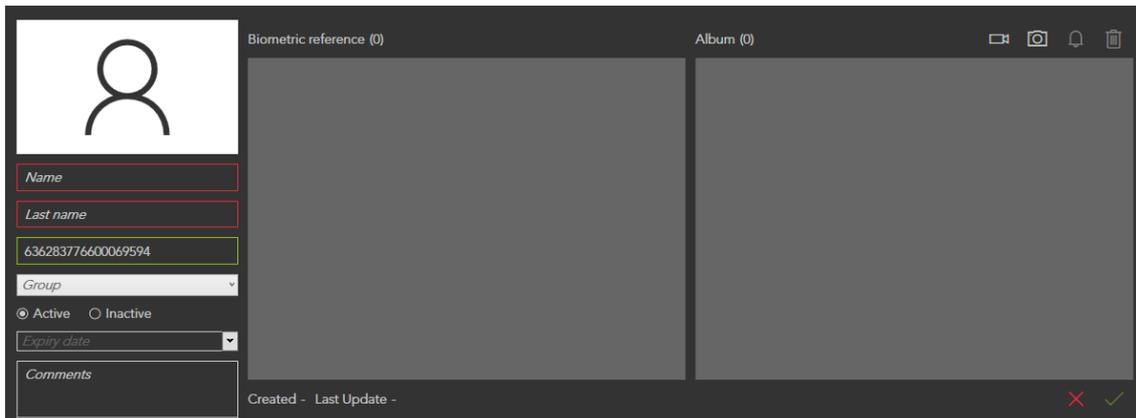


1. **Group management:** The group management menu opens. Well explained at "Creating and managing groups" section in this guide.
2. **Add a new subject:** The subject registration window opens. Well explained at "Registering subjects from images or camera" section in this guide.
3. **Edit selected subject:** opens the selected subject registration window to edit its parameters.
4. **Delete selected subject:** deletes the selected subject.
5. **Export to PDF or Excel:** export subjects from the database to PDF format or Microsoft Excel file (.xlsx).

Register of subjects from images or camera

Go to the **Subjects** tab and click the **Add new subject** icon:

Once clicked **Add New Subject** icon, the following window will appear:



In this window there are a series of icons that allow us to register subjects, remove them and see their alarms:



1. **Register subject from camera:** opens the subject registration window from camera.
2. **Register subject from images:** opens the directory window to register subjects from images.
3. **Delete subject:** delete an existing subject.
4. **View subject alarms:** allows you to view the subject alarms that are present in the database.
5. **Discard icon**  : Discard changes and close the window.
6. **Save icon**  : Save changes and close the window.

In addition, synthetic views can also be generated using the BioGenerator module, explained in this guide.

Registration from images. The following are the steps to follow for registration of subjects from images:

1. In the subject management panel, click the **Add files from images**  icon
2. Select the images you want and click Open. The largest face of each image will be added to the biometric reference panel.
3. Fill in the personal information with the name, surname and a code. By default it is assigned a fixed code, can be changed if desired.

4. If you have a group created you can add the subject to a group by clicking on the **dropdownGroup**.
5. You can then select whether the subject is active or inactive. If it is inactive, Herta will not identify it when it detects it.
6. You can then add an expiration date. After this date the subject will change to inactive. If you do not set anything, the user will never be automatically deleted by default.
7. If you want to add a subject comment you can do it in the **Comments** field.
8. Finally click **Save** to register the subject. 

Registration from camera

Recording subjects from cameras Steps:

1. In the subject management panel, click the **Add faces icon from a video source**. 
2. Click **Add Source** and follow the directions in the **Adding and configuring a new camera** section of this guide then add the desired camera to the camera control. Make sure the camera is not active in the Live tab.
3. Once the video appears, click Start  icon. The software will start capturing the largest face of each image.
4. After established training time is reached, the camera window will close and the best captured faces will be added to the subject's control panel.
Fill in the personal details like name, surname and a code. By default it is assigned a default code, can be changed later.
5. If you have a group already created you can add the subject to this group by clicking on the dropdownGroup.
6. You can then select whether the subject is active or not. If it is inactive, Herta will never identify it when detected.
9. You can then add an expiration date. After this date the subject will change to inactive. If you don't put anything, by default the user will never be inactive automatically.
7. If you want to add a subject comment you can do it in the **Comments** field.
8. Finally click **Save** to register the subject. 

Subjects Registration from Previous Alarms

1. Go to the **Alarms** tab and select one or more (by clicking the Ctrl key) alarms from the list.
2. Right click on any of the selected alarms.
3. Select **Register Subject from Alarm** from the options menu.
4. The best images of the selected alarms will be added to the subject control panel.

Fill in the personal details like the name, surname and a code. By default it is assigned a default code, can be changed if desired.

If you have a group already created you can add the subject to this group by clicking the dropdownGroup.

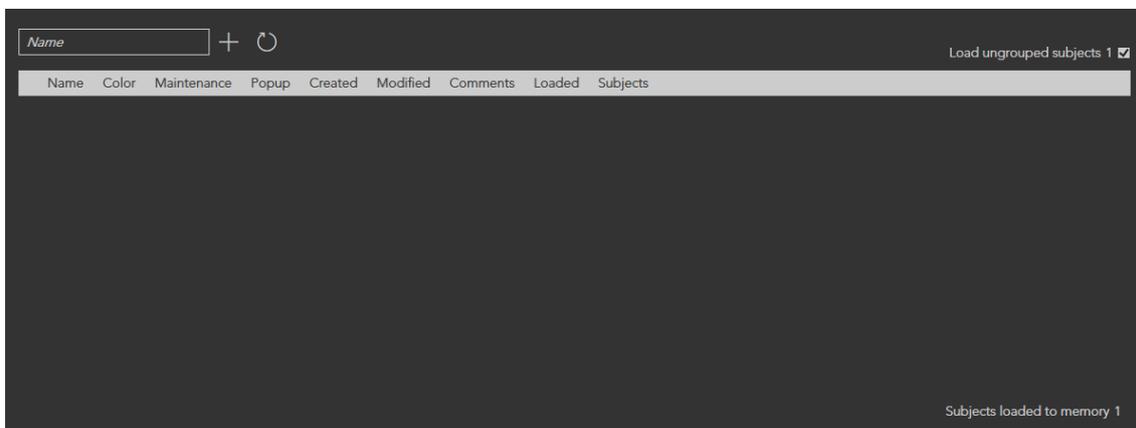
5. You can select whether the subject is active or not. If it is inactive, Herta will not identify it when detected.
6. You can add an expiration date. After this date the subject will change to inactive. If you do not set anything, the user will never be automatically deleted by default.
7. If you want to add a subject's comment you can do it in the **Comments** field.
8. Fill in the personal data and click **Save**.

Creation and groups management

Each subject may or may not be included in a group. By default there is no group created but these can be created in a very simple way. To create a group, click the **Manage Groups** icon.



Clicking this icon will display the following screen:

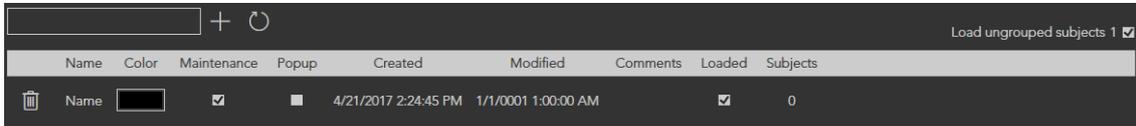


As you can see no group is displayed. To create it type the name of the group on top-left field.



When you have finished typing, click on icon next to the field or the **Enter** key on the keyboard to add it. If it does not appear click the update icon.

Once done, this group will be created and displayed in the box as you can see in the following image:



	Name	Color	Maintenance	Popup	Created	Modified	Comments	Loaded	Subjects
		 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4/21/2017 2:24:45 PM	1/1/0001 1:00:00 AM		<input checked="" type="checkbox"/>	0

Once created, you can perform the following group management operations:

1. You can delete it by clicking on the trash icon before the group's name. When you delete it, Herta will ask if you want to delete the subjects in the group as well, so you can keep the subjects in the database if you want.
2. You can edit the Name by double clicking on it.
3. You can activate or deactivate the group by clicking on the *state* circle.
4. You can assign a highlighted color for when Herta identifies a subject in this group. Default color is black.
5. To activate / deactivate group maintenance, check / uncheck Maintenance.
6. If you want each time BioSurveillance identifies a subject in the group, a pop-up appears, check the Popup.
7. Finally, if you want to add a comment to the group, double-click the field in the comment section.
8. The subject column indicates the number of subjects belonging to this group.

Once the group has been created, when registering a new subject or editing an existing one, it will appear in the dropdown below the code in the subject registration window.

There is also a default loaded option that works to load subjects with no assigned group. If this option is disabled, only subjects with active groups will be identified.

Load ungrouped subjects 1

Modify and update subjects

To modify a subject go to the Subject tab, then you have three different ways to edit it:

1. Left click on the subject.
2. Right-click on the subject and click *Modify*.
3. Selecting and clicking  icon.

The subject management window will appear. Once there you can make the changes you want, in the same way you can add more biometric references, from images and camera.

To update a subject with more reference images can do it from alarms. Go to the Alarms tab and right click on the alarm that contains the desired image. Click on **Update subject from alarm** and you will see the subject management window with the alarm image in the Album section. Select it and drag it to the Biometric Reference section. Click save to update the subject.

To delete a subject you can do it in three different ways:

1. Selecting the subject and clicking  icon.
2. Right clicking and selecting **Delete**.
3. Double left click and click the Delete  icon which appears within the subjects management window.

If you wish, you can download the subject list in PDF Format or .xlsx format by clicking on the  icon.

Tricks and tips

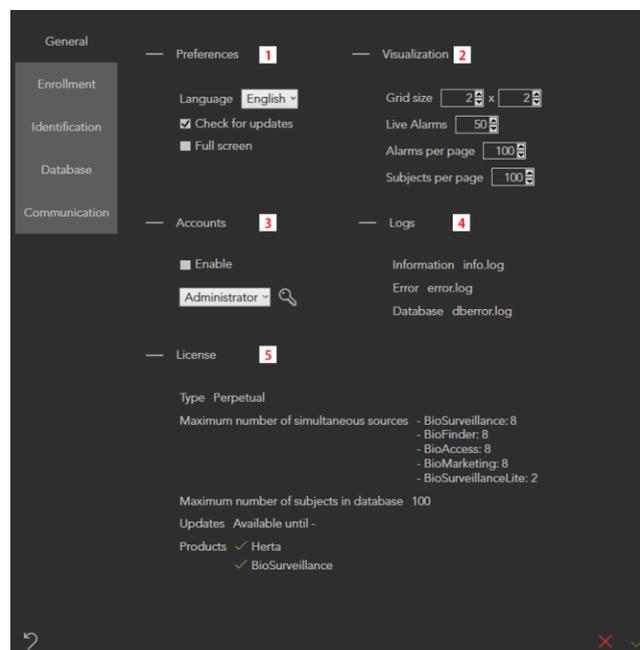
- a) Remember that the registration process is subject to automatic quality control. Consider the recommendations displayed on the screen and observe quality bars (below each face) as an indicator to decide which images to choose for an optimum record.
- b) A correct image for a record should, in general, meet the following requirements:
 - Face surface of 150x150 pixels (minimum 100x100 pixels).
 - Good lighting conditions.
 - Front face.

In addition, you should avoid occlusions, rotations, blur and facial excklickions.

Herta Settings

In the **Settings** tab  it is possible to modify the behavior of the application and adjust the parameters that control the biometric algorithms. This section will only describe the settings that most commonly need to be modified, depending on the scenario. It will also show a brief description of the function of each element, in the form of tooltips passing and leaving the mouse pointer.

General Settings

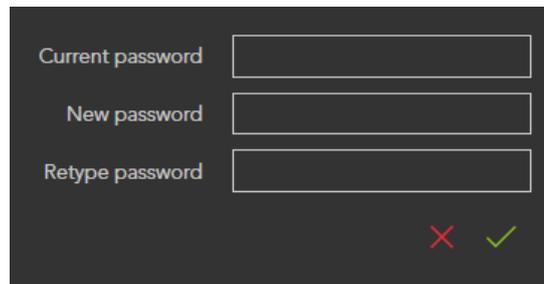


General settings are grouped by categories:

1. **Preferences:**
 - a. **Language:** (English By default), here you can change the language.
 - b. **Updates:** Check updates option if you want Herta to automatically search for new updates every time the application starts.
 - c. **Full screen:** If you want to see Herta in full screen on your monitor, check this option and click save. To exit this mode, uncheck this option and click save.

2. **Visualization:** You can adjust Herta's interaction parameters:
 - a. **Grid size:** You can choose the size (rows and columns) of the camera grid in the Live tab. Note that the increase in cameras has an impact on computational performance and therefore Herta will require more resources.

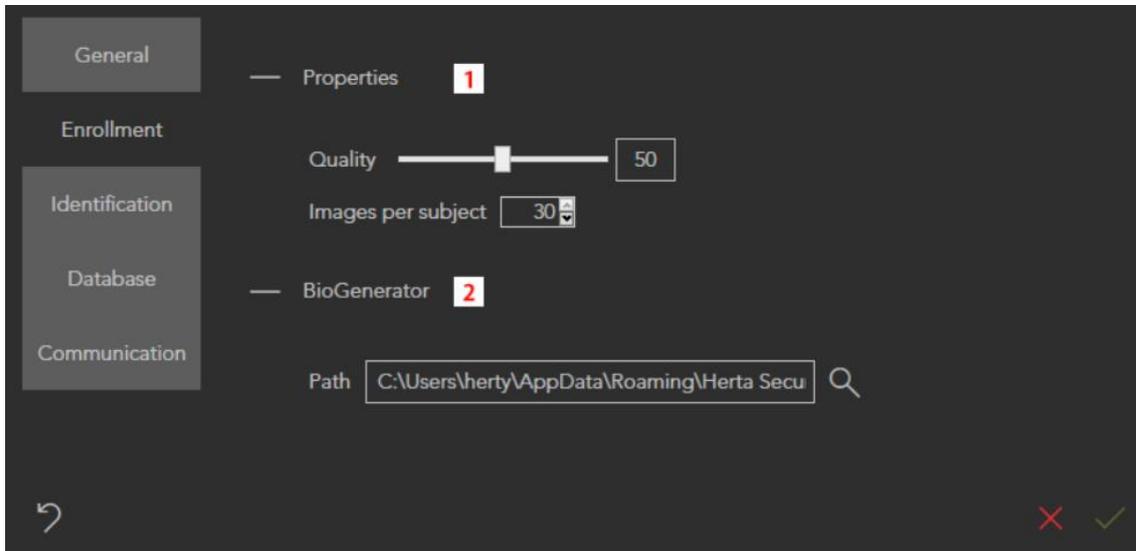
- b. **Live Alarms:** Here you can decide how many alarms to display in the Live Detection panel (Left and Right panel).
 - c. **Alarms per page:** show the number of alarms you want to display for each page in the Alarms section.
 - d. **Subjects per page:** show the number of subjects you want to display for each page in the section Subjects.
3. **Accounts:** This option allows each time you connect to Herta, this request a username and a password to maintain the confidentiality of the data. If you enable the option without setting a password, there will be no default password, to enter you should leave the password blank and enter. To set a password you must first select the user role: *Guest* or *Administrator*. We recommend that you choose Administrator, since the Guest option has limited access to protect data from subjects that may be sensitive. Then click on **Set Password**  And you will see the following window:



If this is your first time, leave the Current Password box blank. Then type the New password, type it again in Repeat password. Act continued to accept. If you want to delete the password click on *Discard* changes.

- 4. **Logs:** If you click on the options that end in **.log**, you can have information about the behavior of Herta.
- 5. **License:** This section provides important information about your product license.
 - a. **License Type:** Licenses can be Perpetual or Demo type. Demo licenses have an expiration date. For more information, see "*Why does Herta ask for license validation with the license server?*" In this guide.
 - b. **Maximum number of simultaneous sources:** show the maximum number of media files that can be processed at the same time in the Live tab, according to the limitation given by the license. Each module has its number of independent available sources.
 - c. **Maximum number of subjects in database:** show the maximum number of subjects that can be simultaneously loaded into the database. This number indicates the subjects that are active in the database. Inactive subjects are excluded.
 - d. **Updates:** License expiration date.
 - e. **Products:** Products for which you are licensed.

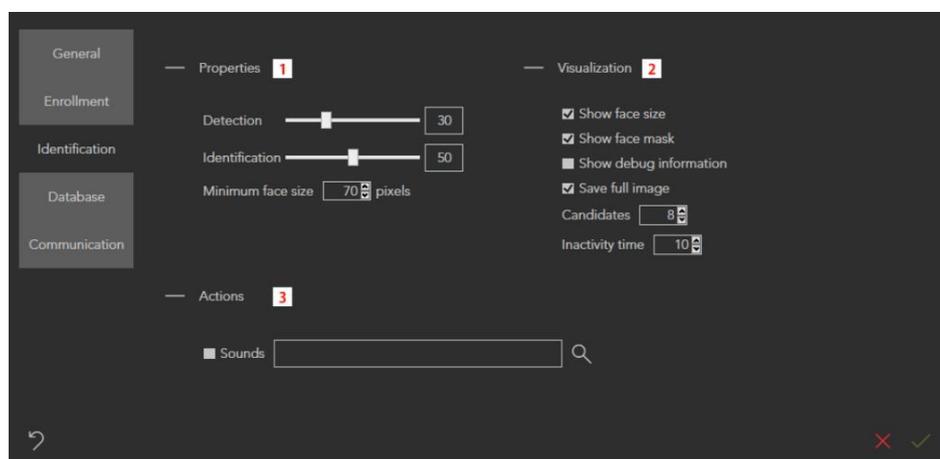
Enrollment settings



In the Registry settings you can make changes to the following parameters:

1. **Properties:**
 - a. **Quality:** Low values in the **Quality** parameter will allow the user to register subjects with poor quality images, which will generate poor biometric references, while a higher value will only allow registering a subject with high quality images, which is highly recommended. The default value is 50.
 - b. **Images per subject:** Indicates the maximum number of images a subject can have in the database. From these images generates the biometric reference.
2. **BioGenerator:** In this section, set the path where BioGenerator is installed. For more information, see the "BioGenerator" section in this guide.

Identification Settings



In the Identification settings you can make changes to the following parameters:

1. **Properties:**

- a. **Detection:** sets the face detection threshold. Low values result in a high number of detections, but false captures may appear. Higher values produce fewer detections but will increase the confidence of these.
- b. **Identification:** set the Face Identification threshold. Low values lead to a high number of identifications, but could lead to false identifications. On the other hand, high values will lead to a low number of identifications, but will increase the security of the identifications, drastically reducing the false identifications.
- c. **Minimum Face Size:** The next important parameter to keep in mind about the detection algorithm is the minimum size for each pixel. This adjustment has a huge impact on the behavior of the detection speed, because for greater limits of facial detection, the detection algorithm needs to perform a deeper facial search on the image. In particular, a low value in the minimum facial surface limit would imply a search that would represent a heavy load on the resources of the computer.

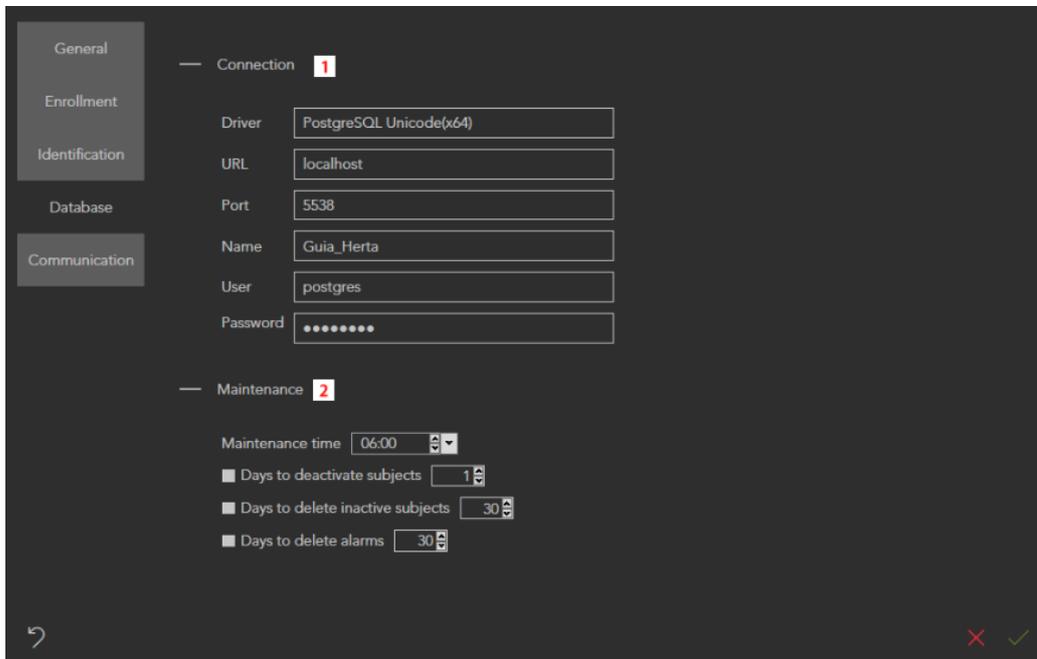
2. **Visualization:**

- a. **Show face size:** During camera processing Live, a frame with the face size will appear when detected.
- b. **Show Face Mask:** Displays fiducials during live camera processing.
- c. **Display debug information:** displays information such as processing speed and real time image resolution.
- d. **Save Full Image:** if enabled the image will be saved from where the application detected a face, which provides additional information but also adds extra load to the database.
- e. **Candidates:** maximum number of identifications that the system can display as possible candidates for recognition.
- f. **Inactivity time:** maximum time interval between two faces of different images to be considered as part of the same alarm. After this time, the new face will be considered a new alarm.

3. **Actions:**

- a. **Sounds:** Enable this option and set the path of a WAV file to play a sound for identification alarms. To add the route you can type it in the text box or click on the  icon to search the right route.

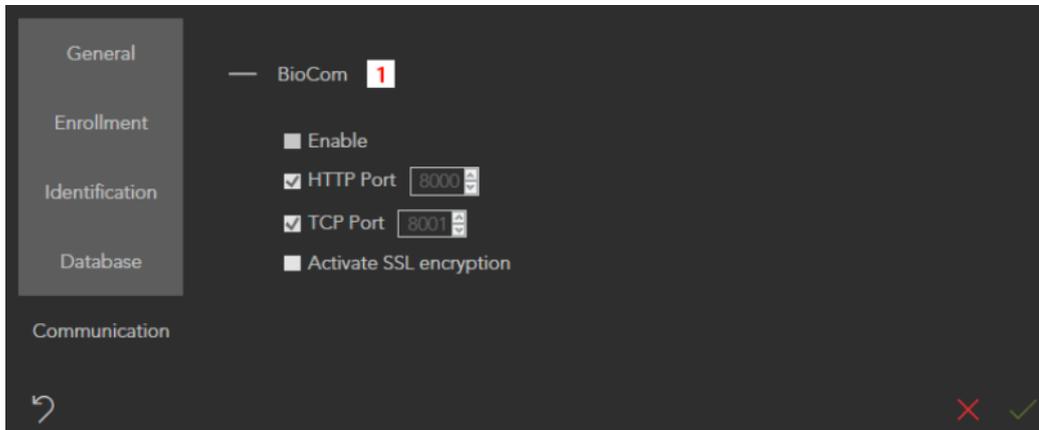
Database Settings



In the Database settings you can make changes to the following parameters:

1. **Connection:**
 - a. **Driver:** Specify the controller used to connect to the database.
 - b. **URL:** Enter the URL of the database server.
 - c. **Port:** Specify the port on which the database server is connected.
 - d. **Name:** Enter the database name. Default database created by the installation process is Herta.
 - e. **User:** database username.
 - f. **Password:** set database password. Default password created by the installation process is Test1234.
2. **Maintenance:**
 - a. **Maintenance time:** Specify the planned time to perform maintenance on the database.
 - b. **Days to deactivate subjects:** Leave this option selected if you want Herta to deactivate subjects after the indicated number of days.
 - c. **Days to delete inactive subjects:** If you want Herta to delete subjects from the database after the indicated days, leave this option checked.
 - d. **Days to delete alarms:** Check this option if you want Herta to delete alarms after the indicated number of days has elapsed.

Communication Settings



1. BioCom:

- a. **Enable:** Select this option if you want Herta to automatically send alarms configured to an external application using the BioCom module.
- b. **HTTP Port:** Leave this option checked and specify the HTTP port where you want to send the alarms.
- c. **TCP Port:** Leave this option checked and specify the TCP port where you want to send the alarms.
- d. **Activate SSL Encryption:** If you feel it is convenient to encrypt your shipments using SSL encryption, check this option.